



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/680,777	10/06/2000	Jonathan F. Gorrell	SC11210ZP	2629

23330 7590 02/18/2004

MOTOROLA, INC.
CORPORATE LAW DEPARTMENT - #56-238
3102 NORTH 56TH STREET
PHOENIX, AZ 85018

EXAMINER

OLSEN, ALLAN W

ART UNIT	PAPER NUMBER
----------	--------------

1763

DATE MAILED: 02/18/2004

9

Please find below and/or attached an Office communication concerning this application or proceeding.

AS

Office Action Summary

Applicati n No.

09/680,777

Applicant(s)

GORRELL ET AL.

Examiner

Allan W Olsen

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
4a) Of the above claim(s) 15-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 8-14 is/are rejected.
- 7) ☒ Claim(s) 5-7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 October 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4.7.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Group I, claims 1-14, in Paper No. 8 is acknowledged. The traversal is on the grounds that the examiner failed to show that the process claims are distinct from the product claims. The Examiner's argument is premised upon the notion (that was derived from Applicant's specification) that the Group I and Group III process claims are, in essence, methods of obtaining higher yields in the production of prior art devices. As such, the product that is obtained by the Group I and Group III method claims is the same product that is obtained by prior art methods. In response, "Applicants respectfully disagree with the Examiner's support. The product made by the process of groups (I and III) would not be identically the same as that produced by the prior art process". This is not found persuasive because Applicant merely asserts that the products would not be the same but Applicant does not provide any support for this assertion.

With respect to the distinction between group I and III, Applicant argues that the Examiner failed to demonstrate the examination of both groups would constitute a serious burden on the Examiner. Applicant states that a serious burden may be shown by demonstrating the inventions to be separately classified. However, because the Examiner indicated both inventions to have the same classification, the Examiner failed to demonstrate that a serious burden exists. The Examiner notes, in view of the combination/subcombination relationship between groups I and III, that a similar classification for groups I and III is not unexpected. Furthermore, a separate classification is a means by which the examiner may demonstrate that a serious burden

Art Unit: 1763

exists, but separate classification is not a requirement in establishing a serious burden. In accord with MPEP 606.05(c), the restriction expressly provided the basis upon which the Examiner held the inventions to be distinct. Applicant did not persuasively argue against the basis provided.

The requirement is still deemed proper and is therefore made FINAL.

Information Disclosure Statement

The Information Disclosure Statement filed June 09, 2003, listed WO 95/000258. As the examiner did not find a copy of this reference in the application file, this reference was not considered. However, the examiner did consider US Patent 5,403,665. Derwent indicates that US 5,403,665 and WO 95/00235 are members of the same patent publication family. The examiner has cited US 5,403,665 on the attached USPTO form 892.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 14 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 14 recites "providing a single liquid for the third and fifth liquids". It is not clear if this limitation requires that the liquid that is used in each of these steps must be a pure liquid rather than a mixture of two or more liquids, or if this limitation requires the fifth liquid to be the same liquid as the third liquid.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on-sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2 and 8-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Maboudian and Howe in J. Vac. Sci. Technol. B 15(1) Jan/Feb 1997, pages 1-20 (hereinafter, Maboudian).

Maboudian teaches a treatment that is outlined as Treatment IV in Table I on page 7. In Treatment IV the dilute HF is used to etch a silicon oxide layer and the HF solution corresponds to the Applicant's claimed "first liquid". The 40% NH₄F solution corresponds to Applicant's claimed "third liquid". The H₂O of the 10 min. rinse/soak corresponds to Applicant's claimed "fourth liquid". The H₂O₂ corresponds to Applicant's claimed "fifth liquid" which is followed by a 10 min. H₂O rinse/soak which corresponds to Applicant's claimed "second liquid". In the sequence that is taught by Maboudian, a liquid that is used in any given step is miscible with the liquid that was used in the preceding step. After the etched substrate is treatment with these five liquids, Maboudian teaches drying the substrate with supercritical CO₂.

Art Unit: 1763

Claims 1, 2, 4, and 8-11 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent 6,542,429 issued to Nogami et al. (hereinafter, Nogami).

Nogami dissolving a first insulating layer with a first insulating layer dissolving fluid. Nogami teaches replacing the insulating layer dissolving fluid with pure water, then replacing the pure water with an alcohol solvent, then providing a raw material solution and then drying with supercritical CO₂. In the sequence taught by Nogami, a liquid that is used in any given step is miscible with the liquid that was used in the preceding step. Nogami teaches the first insulating layer may be silicon dioxide, in which case Nogami teaches using an insulating layer dissolving fluid that comprises HF. Nogami teaches the first insulating layer may be a polymer, in which case Nogami teaches the insulating layer dissolving fluid may be an organic solvent such as methanol. See column 3, line 9 – column 4, line 50.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 5,545,291 issued to Smith et al. (hereinafter, Smith).

Smith teaches etching, through a patterned photoresist, a substrate to make micromachined blocks (19). Smith teaches the layer being etched may comprise Ge. Smith teaches subsequent process steps including an HF solution treatment step a water rinse step and step of replacing the water with acetone. Smith teaches drying the micromachined blocks with supercritical CO₂. See: column 9, line 24; column 11, line 4 – column 13, line 6.

Art Unit: 1763

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Smith.

The teachings of Smith, noted above, are herein relied upon.

Smith does not teach etching the Ge comprising layer with H₂O₂.

It would have been obvious to one skilled in the art to etch the Ge comprising layer with H₂O₂ because Smith teaches etching a GaAs layer with H₂O₂ and Smith teaches a Ge comprising layer may be used in place of the GaAs layer. The examiner takes Official Notice that H₂O₂ is widely recognized as a standard etchant for Ge comprising materials. In light of Smith's teaching regarding the use of H₂O₂ to etch of GaAs as well as the use of a Ge comprising layer in place of the GaAs layer, the skilled artisan would immediately envisage the use of H₂O₂ as the etchant for the Ge comprising layer.

Allowable Subject Matter

Claims 5-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. It is noted that some prior art of record (for example, DE 195 06 404 C1) is applicable against the present claims. However, in view of the foregoing rejections this prior art is not relied upon at this time.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allan Olsen whose telephone number is 571-272-1441. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Greg Mills, can be reached on 571-272-1439.

The fax number for TC1700 is 703-872-9306 (non-after finals and after-final).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-1300.

Allan Olsen, Ph.D.
February 16, 2004

A handwritten signature in black ink, appearing to read "Allan Olsen", is written over the typed name and date.